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# *Tax Burden on Labour Income in the Visegrád Region*

**SUMMARY:** This study intends to identify the indicator(s) being the most suitable to analyse the volume of the tax burden on labour income. The conclusions drawn indicate that for microeconomic analyses the rate of non-tax compulsory payments, calculated by the OECD, while for macroeconomic analyses the implicit tax rate on labour indicator of the EU is the most suitable to be used. The figures obviously demonstrate that the aggregated volume of the tax burden on labour incomes is lower in the Visegrád region than in the old EU Member States of continental Europe; while the differences between the countries in this respect have diminished in the last decade. The main reasons for the survival of disparities in the rates of taxation are the volume of public debt, the economic weight of small enterprises, the role of tourism, the volume of consumption taxes and the traditions of taxation.

**KEYWORDS:** tax wedge, tax burden on labour incomes, private pension funds, competitiveness

**JEL CODES:** H24, H55, H71, J32

Macro- and micro-level indicators are also used to establish the volume of taxes levied on labour. In the last ten-fifteen years, the use of the tax wedge as an indicator has become more and more widely accepted. As tax wedge is an indicator that has found its way from the literature to the public media and is used quite often in terms of international comparisons, it deserves a thorough, substantive analysis. For macroeconomic analyses, the EU's statistical rate used to evaluate the tax burden on labour incomes, namely the *implicit tax rate of labour taxation*, is a proper base indicator.

However, the determination of the scope of data on the basis of which the indicators are calculated, is an issue of substantial importance; as one might say 'the devil is in the details' even in

this case. These details are the subject of a closer examination in this article, using the examples of a specific group of countries.

First, we investigate the indicators used for the purposes of comparisons on micro- and macro-levels. Up to now, it was a widely shared position among the professionals that the OECD's tax wedge and the implicit tax rate of labour taxation of the EU DG TAXAUD are the suitable bases for calculations. However, a more detailed examination revealed that certain taxes were merely 'forgot' to be taken into consideration in the publications of international institutions, dating back to the first half of the 2010s. Hence, we focused on a search for possibilities of improvement of these two indicators, in terms of comparability and homogeneity. At this point, we came across the compulsory payment indicators of OECD, which proved to be properly applica-

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ble on micro-level. Therefore, being aware of the omission of compulsory private pension fund contributions from the calculation of tax burden in the first half of the 2010s, our only task to remain was to correct the implicit tax rate of labour taxation of the EU DG TAXAUD. During the hard work of collecting the respective data, we were glad to hear the positive news, namely that in the most recent publications, edited by *Piketty*, these contributions are already considered as compulsory tax payments.<sup>1</sup>

Thereafter, we collected and tabulated the following data, clustered by years and countries:

- the values of compulsory payment indicators,
- the taken values of the tax burden on labour income (implicit tax rate on labour).

Following the graphic display of data, we performed a regional analysis and established the micro- and macro-level trends; furthermore, we made an ‘inventory’ of the factors affecting the most the tax burden on labour income. Finally, we supplemented the analysis with a country-based investigation of the changes in tax burden over time and the underlying reasons that induced or must have induced such changes.

Our analysis is intended to answer the following questions.

- ❶ In which case can the tax wedges and tax rate indicators of the different countries be compared to each other?
- ❷ What are the reasons behind the differences between tax burdens on labour income in the Visegrád region?
- ❸ Can the current tax burden on labour income in Hungary be considered as high?

## METHODOLOGY

As a starting point, we took from the webpages of OECD and Eurostat the precalculated,

precise values of the indicators. With respect to the compulsory payment indicators of non-OECD countries, we used the data from other publications or we made our calculations (or, in certain cases, our estimations). We reckoned with the contributions paid to the private pension funds (or the rate thereof in proportion to the labour income) as a surplus increasing the tax wedge indicators.

With respect to the calculation or estimation of the compulsory payment indicators in the three countries of the region located in South-East Europe, we relied on other analyses, studies, and statistical data.<sup>2</sup> Concerning the non-EU country, Serbia, we calculated the compulsory payment indicator only (based on the prevailing tax laws).

When calculating the compulsory payment indicators, we limited our analysis to the volume of taxes levied on average income levels (average tax rate and marginal tax rate), as we consider this method to be more suitable to reveal the major differences between the countries.<sup>3</sup> For reasons of space, this article evades the detailed demonstration of the tax burden of families raising children,

## LITERATURE

Though several studies were prepared with the aim of analysing the taxation of labour incomes, almost all of these concentrated on the investigation of the average tax wedge values of OECD or the changes in the EU DG TAXAUD implicit tax rates of labour taxation in the last few years. In our opinion, the revision of these studies would have been redundant, as in most of the cases, not even among the footnotes of them is any reference made to the possible existence of non-tax compulsory payments in the countries.<sup>4</sup>

However, we managed to find two examples of the way of thinking we propose. One

of these two examples is a very detailed working paper of the OECD on the analysis of the trends of labour incomes and the related taxation in Slovakia, which paper already investigated the compulsory payment indicators instead of the OECD's average tax wedge.<sup>5</sup> The other example is an analysis of substantial questions of compulsory payment rates, prepared by the working group of the Croatian *Ivica Urban*.<sup>6</sup> The latter, relatively detailed paper investigates the compulsory payment indicators of 17 EU-countries, taken from certain preselected years, on various income levels and with respect to different family types. With respect to our subjected region, besides the hereinabove referred papers we were able to find only 2–3 further studies in English language<sup>7</sup> which draw the attention of the readers to the existence of another taxation indicator that is more adequate than tax wedge. The editors of the 2009–2011 volumes of the EU DG Taxation Trends were the last ones to note that disregarding the private pension fund contributions leads to a lower calculated implicit tax rate of labour taxation – the same note was not indicated in any later issues.<sup>8</sup> An even bigger problem of the related studies is the unconsidered copy-pasting of the indicators published in the OECD's tax wedge issues with respect to the region's OECD-countries. As a contrary example we may mention Romania, Croatia, and Bulgaria, as they apply a more pragmatist approach in the calculation of the tax burden of their own countries: namely, they qualify all amounts not paid to the pockets of workers in any given month as a compulsory payment – including, among others, the private pension fund contributions as well.<sup>9</sup>

The article provides a detailed analysis of the indicator of the implicit tax rate on labour<sup>10</sup> and the 'compulsory payment indicators' calculated by the OECD. Any further indicators of the tax burden on labour income

will only be mentioned sketchily, without substantial estimation thereof.

### STARTING POINTS OF THE ANALYSIS: INDICATORS OF OECD AND EU DG TAXAUD

The EU's statistical rate used to evaluate the tax burden on labour incomes is the *implicit tax rate of labour*. The same indicator is calculated with respect to consumption and equity capital as well; hence, based on the respective figures, conclusions may be drawn concerning the state's willingness of placing tax burdens on the different fields. The calculation of this EU indicator is quite difficult and requires the knowledge of the major GDP elements as well. (That is the reason, why no data on the tax burden on labour incomes are published for one and a half year after the financial closing of a year.) In contrary, OECD indicators are published relatively fast (for example, the indicators of 2017 were published in April 2018 already).

However, we must note, that the analysis of the tax burden on labour income is seriously hindered by certain differences in the applied approaches. The statistics based on the mainstream economic approach group the compulsory payments under the participants of financing instead of the content of financing. Hence, in this system, the private pension fund contributions are not considered as taxes and not calculated in the tax wedge, either. Therefore, the difference between the tax wedge indicators of individual countries is considerably influenced by the fact, whether in these countries the labour incomes are subject to compulsory payment obligations due to the private pension funds, or not. For the mentioned reasons, the proper comparability of the OECD indicators is a subject to a similar level of non-state financing of pensions in the concerned countries. Another possible

way of comparison seems to be the application of indicators which take into consideration the private pension fund contributions as well, besides the compulsory payments made to state-owned funds for the same purpose. Fortunately, for the last few years, the OECD's webpage indicates also the values of 'compulsory payment indicators'. By comparing these values to the well-known tax wedge indicators, we are able to reduce the differences between the values of the latter by almost

one-third! This comparison of base indicators is shown in *Table 1*.

### A SIMILAR INDICATOR – A DIFFERENT METHOD

The tax wedge indicator may be expressed by using a different mathematical method, calculating the total expenditures of the employer in connection with the payment of 100 units

*Table 1*

#### COMPARISON OF BASE INDICATORS OF THE OECD AND THE EU<sup>11</sup>

Attributes of indicators	Compulsory payment indicators	Implicit tax rate of labour taxation
Who is responsible for the calculation?	OECD	DG TAXAUD
What level does the indicator apply to?	Micro-level (individuals, families)	Macro-level (country)
On whose income is it calculated?	On employees' income	On employees' income
Which industries' data is the calculation based on?	Without agriculture and the public sector (sectors 'B-N')	Incomes in all industries
Is it a full-scope indicator?	It is calculated with respect to six base cases <sup>12</sup>	It takes into consideration the full scale of labour incomes
Is there any similar or associated indicator?	By using a different formula: The total amount of the employer's costs payable on a salary of HUF 100	Yes, the implicit tax burden on equity income and consumption
Does it take into consideration subsidies?	No	No
Does it take into consideration tax allowances?	No, if the use thereof is assigned to a particular purpose by any means	Partially (in the denominator). Personal income tax credits are not taken into consideration
Does it take into consideration child tax allowance?	Yes, different family types are denominated for this purpose	Yes
Are the steps of the calculation method easily traceable?	Yes, the values of indicators pertaining to different income levels and used for the calculation are shown	The calculation method is rather difficult
When (how fast) is it published?	Next spring	Almost 18 months following the end of the given year
Does it take into consideration marginal taxes?	Yes, as a part of a different indicator (calculated for the same family status and income level)	No

Attributes of indicators	Compulsory payment indicators	Implicit tax rate of labour taxation
Are the compulsory contributions to private pension funds considered as compulsory payment?	They are, as a part of the 'compulsory payment indicator'; this indicator is calculated with respect to six base cases <sup>13</sup>	Yes, in the last few years
Is it suitable to be a tool for comparison between countries using Anglo-Saxon and continental pension schemes?	No	No
For which countries is it calculated?	OECD-countries only	EU-countries + 8 European countries
Is it based on calculated or factual data?	It is based on the tax schedule	It is calculated from factual information
Numerator?	PIT, contributions payable to the state, other payroll taxes, compulsory contributions paid to private pension funds	PIT, contributions payable to the state, other payroll taxes. Compulsory contributions paid to private pension funds <sup>14</sup>
Denominator?	All expenditures arose for the purpose of remuneration of work (provided that such expenditure is not considered to be a subsidy according to the logic of the OECD)	All expenditures arose for the purpose of remuneration of work (including implicit social insurance contributions)
Are sole entrepreneurs taken into consideration?	No, employees only	No, the tax burden on the income of sole entrepreneurs is taken into consideration in the calculation method of the implicit tax rate on equity income
Which indicator's value is higher: the compulsory payment indicator or the implicit tax rate on labour?	Typically, the value of the implicit tax rate is lower than the compulsory payment indicator (this does not apply to each country)	Typically, the value of the implicit tax rate is lower than the compulsory payment indicator (this does not apply to each country)
Are the taxes and contributions payable on pension calculated in the value of the indicator?	No	No
Is the effect of imputed social insurance contribution is taken into consideration?	No	Yes, in the last few years
The method of publication	On the website only, no printed (book) form is available <sup>15</sup>	On the website and in hard copy format as well (as a book)

Source: own editing, based on the data of the OECD and the EU

of net wage.<sup>16</sup> For example, the value of this indicator (the total cost of the employer) in Hungary in 2018 (ignoring the family- and tax allowances) is 182 units (irrespective of the level of income). The bases for calculation of this indicator are tax schedules on the one hand, and the statistical data of income, published with respect to the entire economy, on the other hand.<sup>17</sup> The analysed indicators are included in *Table 2*.

### OTHER APPROACHES

French authors introduced a tax rate indicator that classifies the value-added tax levied on consumption also as compulsory payment.<sup>18</sup> A similar approach was used by the two authors in the IMF working papers series in 2011 as well.<sup>19</sup> They made their analysis on the basis of factual information: first, they determined the volume of tax burden including the value-added taxes on consumption with respect to 8 countries and prepared a tax analysis per income decimals. However, Slovakia was the only country from the region involved in their examinations.

## 1 CHANGES OF THE TWO INDICATORS THE VISEGRÁD REGION

The Visegrád region was selected to be in the focal point of our examinations because equity also has the nature and fondness for selecting regions – however, in this selection method the volume of tax burden plays a less significant role recently. Once the investor made its choice concerning the preferred geographical area, the selection of the location of the business site from among the possible settlements is strongly influenced by the volume of tax burden levied on wages, compared to the neighbouring countries in the region.<sup>20</sup> The implicit tax rate on labour is demonstrated in *Figures 1 and 2*.

### Implicit tax rate on labour

Figure 1 demonstrates a reduction in Hungary’s indicator after 2008 (to 38 percent from 42 percent), then the rate rose again between 2012 and 2015, back to the initial value. By 2018, the indicator fell below 39 percent, which is very similar to that of the

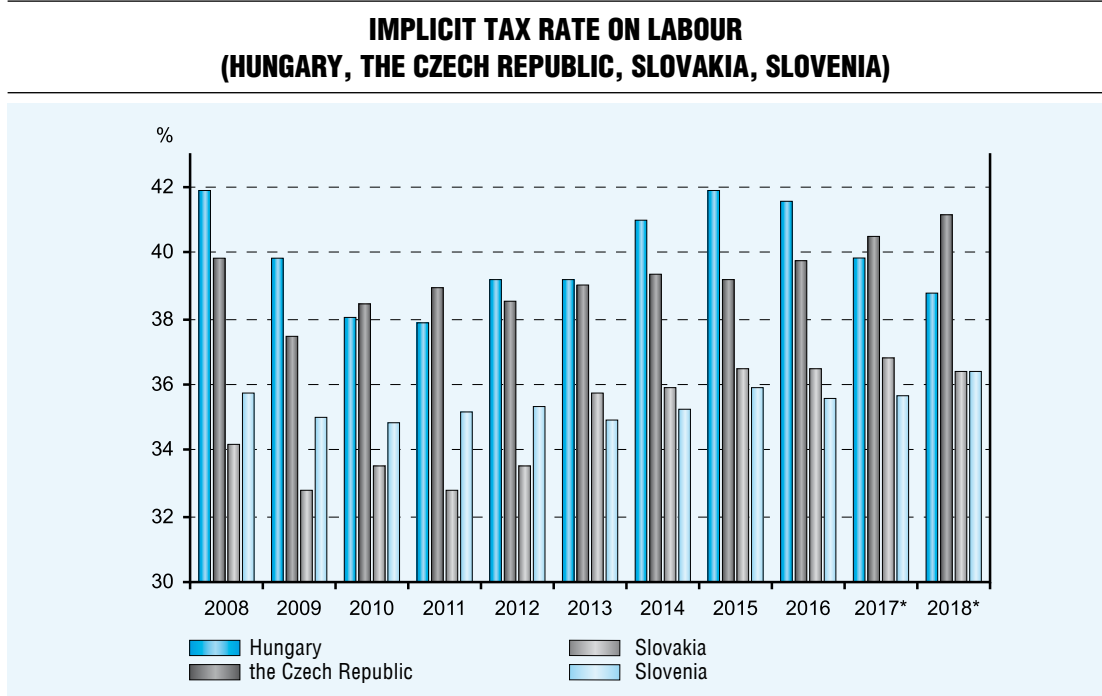
Table 2

### THE ANALYSED INDICATORS

The name of the adjusted or applied indicator	The examined income level or family type
<i>The indicator applied: the implicit tax rate of labour</i>	–
<i>The indicator applied: compulsory average payment</i>	In case of average income Single
<i>The indicator applied: compulsory marginal payment</i>	In case of average income Single
<i>The indicator applied: compulsory average payment</i>	

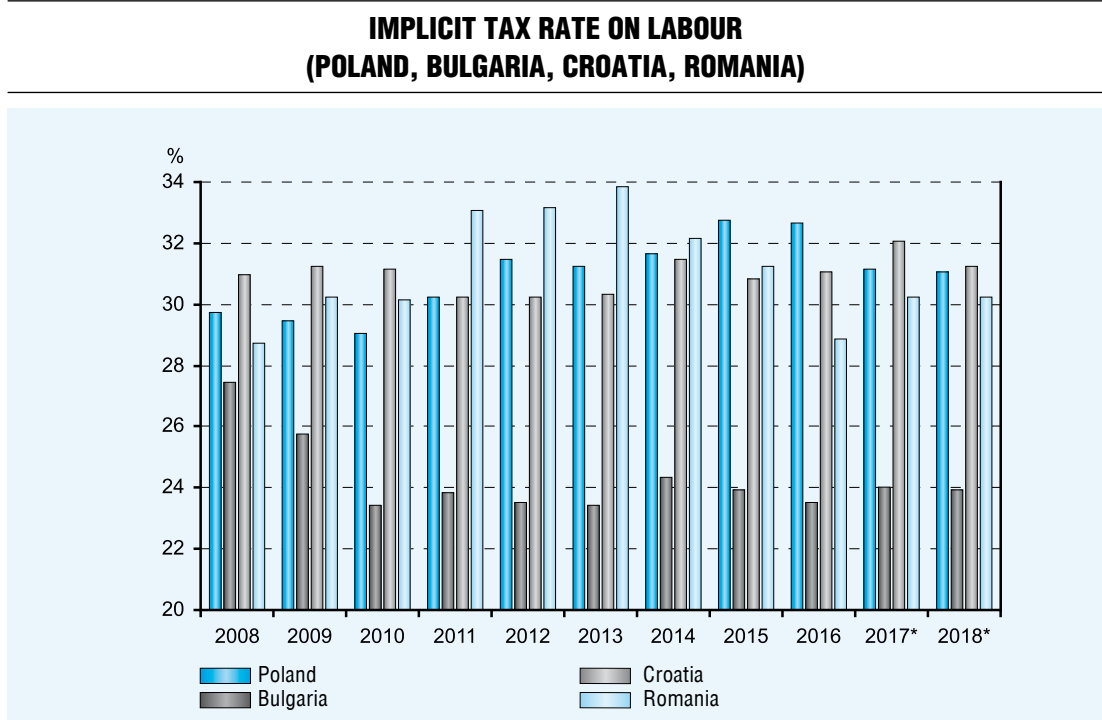
Source: own edited

Figure 1



\*The expected values of 2017 and 2018 are our estimations.  
Source: own calculation, based on the data of EU DG Taxation Trends

Figure 2



\*The expected values of 2017 and 2018 are our estimations.  
Source: own calculation, based on the data of EU DG Taxation Trends

other three countries. In contrary to Hungary, this indicator in the other three countries is seemingly stable: following a short fallback in 2008–2009, the rate rose back (to the initial, 2008-level in Slovenia and above the initial level in the countries from former Czechoslovakia):

As demonstrated in Figure 2, the volatility of the indicator in Bulgaria is quite small since the decrease thereof between 2008–2010. The rate of compulsory payment in Croatia was a stable 30–31 percent in the examined period (with the only exception of 2017, when the indicator was higher). The original rate in Poland (around 29 percent) first increased above 32 percent (2015–2016), but an estimated fallback to 31 percent is foreseen for 2017–2018. In the middle of the examined period, a peak in the compulsory payment indicator was observed (around 33 percent) in Romania;<sup>21</sup> while both at the beginning of the period and in 2017–2018 (due to the changes implemented in 2015) the same indicator was around 30 percent.

A joint interpretation of Figures 1 and 2 demonstrate an average compulsory payment indicator of 34.3 percent in the region,<sup>22</sup> in details:

- the indicator is above the average in the Czech Republic and in Hungary (around 38–40 percent),
- the indicators of Slovenia and Slovakia exceed the average by 2 percent,
- the indicators of Croatia, Poland and Romania are less than the average by 2 to 4 percent (around 32–34 percent),
- the rate of compulsory payment is significantly less in Bulgaria (24 percent).

Ever since 2010, a moderate trend of ‘central alignment’ effects the indicators in the region: the indicators in the two countries standing the two endpoints of the scale (Bulgaria and Hungary) have been nearing to the average. We must note, that only in two coun-

tries in the region reaches the implicit tax rate on labour the average of the same indicators in the ‘old’ continental EU member states (38.4 percent in 2016).

Our estimations concerning the 2017–2018 values of the implicit tax rate on labour are based on data from 2016. We amended the base data only if (and to the extent) it was required by the difference between the dynamics of wages and the increase of the aggregate of the PIT- and social insurance contribution incomes<sup>23</sup>. Hence, the calculated growth rates are based on the data of convergence reports of the states, published in May 2018.<sup>24</sup>

### The average rate of compulsory payment

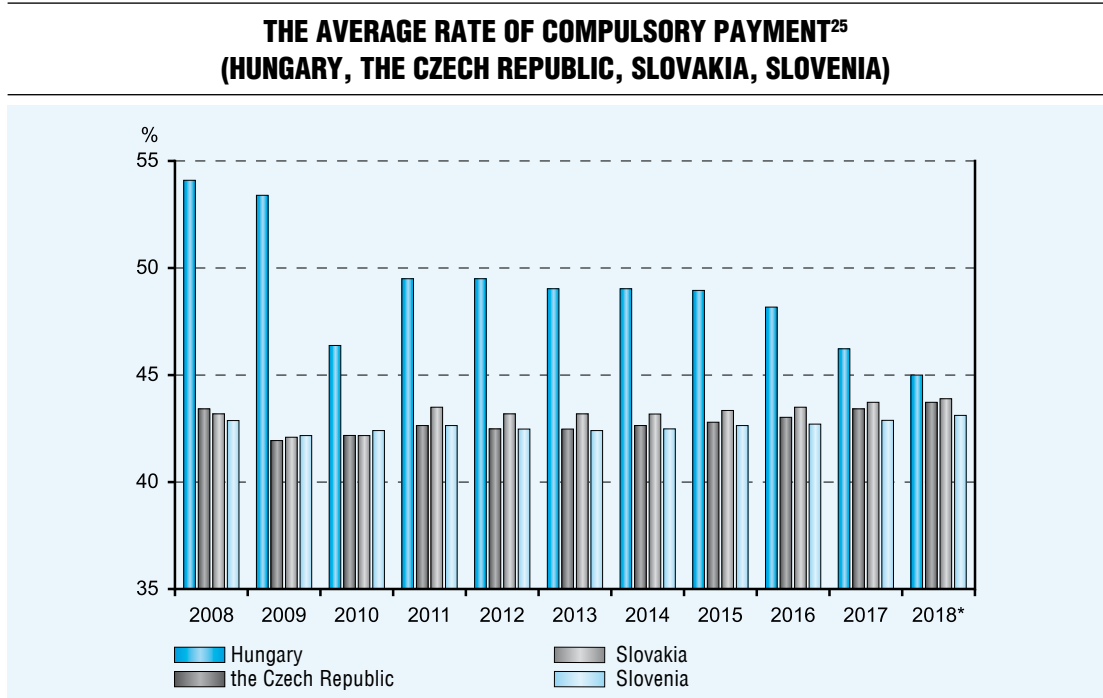
Figures 3 and 4 demonstrate the average rates of compulsory payment in the examined countries per 100 percent of the average income.

Figure 3 demonstrates the reduction of this indicator in Hungary. After reaching a peak in 2008–2009, when the indicator value was an extraordinarily high (at 53–54 percent), for the next 5 years a stagnation at 49 percent was observable and by 2018, the rate fell back to 45 percent. In the countries of former Czechoslovakia, following a slight decrease by 1 percent in 2009, the value of this indicator was raising back up to the pre-crisis (2008) level. The rate in Slovenia was practically unchanged during the examined 9 years.

Following a slight decrease in 2008–2009, the respective indicator in Romania fell back by 2 percentage points from 2015, due to the reduction of the social insurance contribution by 5 percentage points in 2015. In Poland, the rate increased by 1 percentage point after 2011. Bulgaria is still characterized by a low average rate of compulsory payment, despite a slight increase in 2017–2018 (due to the rise of social insurance contributions).<sup>26</sup> In Croatia, the data

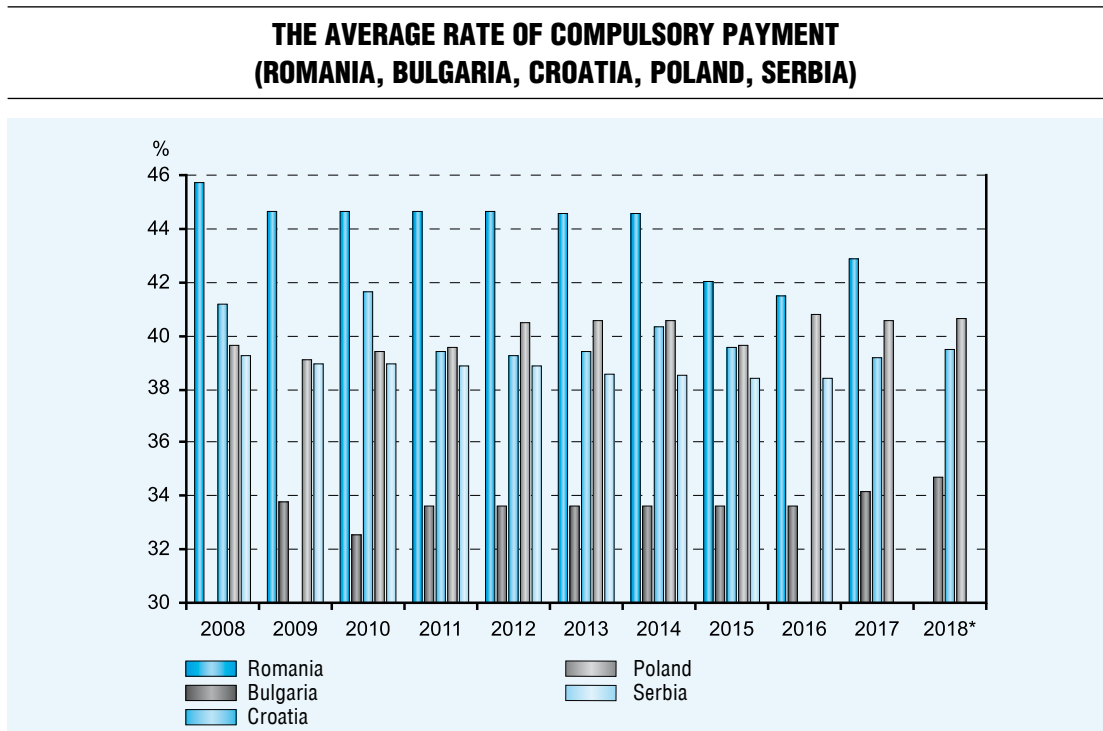


Figure 3



\*Own calculation with respect to the expected amount in 2018  
Source: own calculation, OECD

Figure 4



\*Own calculation with respect to the expected amount in 2018  
Source: own calculation, OECD, NSI, Radu, Urban

show temporary amplitudes.<sup>27</sup> The figure also shows the indicator of Serbia, an unchanged and stable rate around 39 percent.<sup>28</sup>

A joint interpretation of data included in Figures 3 and 4 leads us to the following conclusions:

- the indicator of the country of the highest population (Poland) is only slightly under the average value (41 percent<sup>29</sup>),
- the 5 countries with the highest rates are Czechoslovakia, Hungary, Slovakia, Slovenia, Romania; their rates between 43–45 percent are 2–4 above the average,
- the rate of Croatia (39 percent) is 2 percent under the average, and
- Bulgaria has the lowest rate of compulsory payment (34.7 percent).

However, it is worth mentioning that the rates of each country are behind the average of the same indicators in the continental countries of Western Europe (46.9 percent in 2017, as shown at the beginning of part II). The trend of central alignment is also demonstrated regarding this indicator as well: while in 2009, the difference between the highest (Hungary) and the lowest (Bulgaria) rates of compulsory payment was 20 percentage points, by 2018, this difference lessened by half. The compulsory payment indicator exceeded the implicit tax rate on labour in each country; the difference between these two indicators was the less in the Czech Republic and Slovenia.

Our estimation concerning the rate of compulsory payment for 2018 is based on the value of the increase of the relative volume of compulsory payment obligations levied on average labour income by the marginal rate in 2018<sup>30</sup>, due to the expected increase in wages. In our opinion, this estimated value might be a good forecast for 2018, as there were no considerable changes in the scheme of compulsory payments in any of the countries effective from January 2018 (except for Romania).

### The marginal rate of compulsory payment

The respective data, calculated to 100 percent of the average income, are shown in *Figures 5 and 6*:

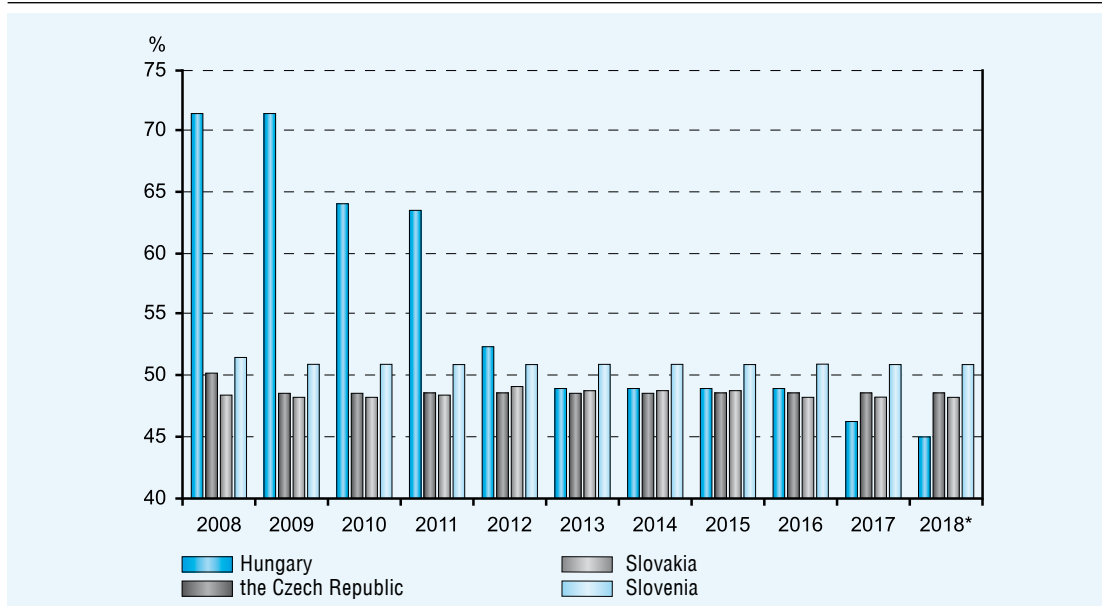
As Figure 5 demonstrates, the marginal rates of compulsory payments in Slovenia and Slovakia are almost unchanged. In the Czech Republic, the rate dropped in 2009 to a level that remained unchanged until the end of 2017. In contrary, the respective rate of Hungary showed an extraordinary amplitude of change: it fell back to 45 percent from the original 71.5 percent.

As Figure 6 demonstrates, the only considerable change on the level of average incomes is observable in Croatia only (since 2017), as due to the new tax schedule introduced by the country the marginal rate of compulsory payments increased by 7 percentage points. The figures of Poland also show a slight increase in this regard (compared to the same data from 2009–2012), while in the case of Romania, we see a moderate decrease of the respective indicator. Bulgaria's indicator moved upwards in 2017–2018 (by 1 percentage point). With respect to Serbia, data are available for one year only (2013), and that demonstrate a marginal rate of compulsory payments even lower than that of Bulgaria.

In a joint interpretation, Figures 5 and 6 demonstrate that the countries of former Czechoslovakia and the two EU-member countries from former Yugoslavia fall in the range of values between 48 and 51 percent. 2 countries' data are under the average level; however, these countries represent together 60 percent of the total population of the region (Poland, Romania). Currently (in 2018), Hungary is in the middle, between the two endpoints of the scale with a respective value of 45 percent. In Bulgaria, the rate of compulsory payment is far lower than in all the other countries (35 percent).

Figure 5

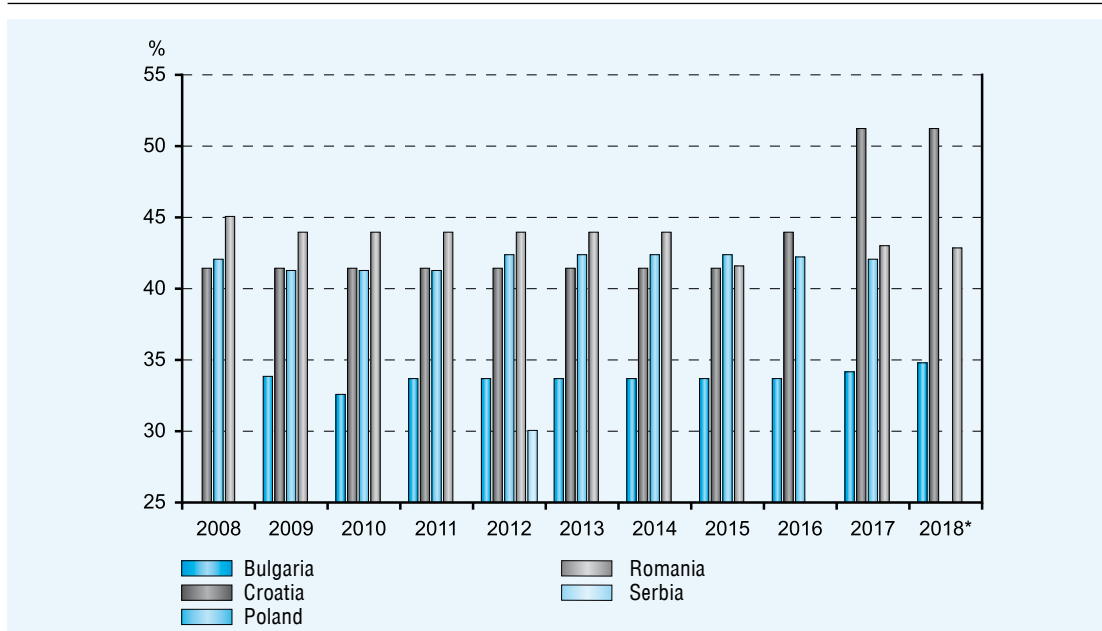
**THE MARGINAL RATE OF COMPULSORY PAYMENT<sup>31</sup>  
(HUNGARY, THE CZECH REPUBLIC, SLOVAKIA, SLOVENIA)**



\* Own calculation with respect to the expected amount in 2018.  
Source: own calculation, OECD

Figure 6

**THE MARGINAL RATE OF COMPULSORY PAYMENT  
(BULGARIA, CROATIA, POLAND, ROMANIA, SERBIA)**



\* Own calculation with respect to the expected amount in 2018.  
Source: own calculation, OECD

## 2 COMPULSORY PAYMENTS ON LABOUR INCOME IN THE CONTINENTAL COUNTRIES OF WESTERN EUROPE

The rate of compulsory payment on average labour income was 46.9 percent in the ‘old’, continental EU-countries in 2017, exceeding the average rate of the Visegrád region (41 percent) significantly.

▶ In 7 countries, the indicator was 43 percent or more. These countries have an aggregate population of 250 million and the average value of their rates was 48.5 percent.<sup>32</sup>

▶ In another group of countries (three Mediterranean countries and a smaller country further away, having an aggregate population of 60 million people) the rate of compulsory payment indicator stayed under this level; however, even in these countries the rate was 40 percent on average, that equals the rate of the Visegrád region’s countries of lower tax burden.

▶ In addition thereto, though there are three more developed EU-countries, but neither their compulsory payment indicators nor their implicit tax rates may be compared to the continental countries. In these countries, a different financing method is used to arrange the same social mission. Although there is a significant value of private pension fund contributions, the payment thereof is not prescribed by mandatory legislative acts of the state; hence, neither the OECD nor the EU classifies and calculates these contributions as a compulsory tax on labour income. Therefore, both the compulsory payment indicator and the implicit tax rate are significantly lower here than in our continent.<sup>33</sup>

In the older continental member states of the EU, the implicit tax rate on labour reached an average of 38.6 percent in 2016, exceeding the average volume of the same in the countries of the Visegrád region, which

was 34.3 percent in 2016. There are only four countries, where this rate was less than 38 percent (Spain, Portugal, Luxembourg and the Netherlands). The data of compulsory payments and tax burden in 2016 and 2017 are demonstrated in *Table 3*.

### A global overview

From the aspect of compulsory payment obligations levied on wages, three groups can be formed from the countries of the world:

▶ The countries operating a public health-care and pension system, financed from taxes and contributions levied by the state. Within this first category, a specific sub-group is formed by the countries, where a centrally determined compulsory portion of contributions shall be paid to the private pension funds. (Examples of this system are mainly the former socialist countries of Europe and the Netherlands.)

▶ The countries mainly relying on the private pension funds in the financing of pensions, but where the payment of contributions to such funds is not made compulsory by state regulations. Such systems are mainly built on Anglo-Saxon traditions or influence. In certain countries (e.g. in the USA), the same scheme is applied in the field of health-care.

▶ Countries that are of a rather ‘offshore’ nature from the aspect of the tax burden on labour income, where

- there is no comprehensive pension scheme at all (South-Korea),
- the public expenditures on pensions and healthcare are fixed on a low level (China, most countries of South-East Asia, India).

Hence, it is evident that any comparison between tax wedges and tax rates is only meaningful if made among the countries belonging to the same cluster.

<b>CONTINENTAL WESTERN COUNTRIES OF THE EU*</b>			
<b>Compulsory payment, average</b>	<b>2017</b>	<b>Implicit tax rate on labour</b>	<b>2016</b>
	<b>%</b>		<b>%</b>
Spain	39.3	The Netherlands <sup>34</sup>	32.9
Luxembourg	37.9	Spain	30.9
Greece	40.8	Luxembourg	32.2
Portugal	41.4	Portugal	29.0
<b>average**</b>	<b>39.9</b>	<b>average**</b>	<b>31.5%</b>
Sweden	43.1	Sweden	40.2
Finland	42.9	Finland	40.7
Austria	47.4	Austria	41.2
Italy	47.7	Italy	42.6
France	47.6	France	41.2
the Netherlands	50.9	Germany	38.2
Germany	49.7	Greece	41.0
Belgium	53.7	Belgium	42.4
<b>average**</b>	<b>48.5</b>	<b>average**</b>	<b>40.3%</b>
<b>total average of the above**</b>	<b>46.9</b>	<b>total average of the above***</b>	<b>38.6%</b>

\*without Denmark

\*\*weighted by private individuals

\*\*\*weighted by wage bill

### 3 SIGNIFICANT FACTORS INFLUENCING THE TRENDS OF PAYMENT OBLIGATIONS

#### The effect of the taxation scheme, taxation traditions

In countries having significant income collected from sales taxes a more moderate tax burden on labour income is also acceptable. A major problem of the countries in the Southeast-Europe region is the existence of a

baksheesh-based grey economy. The tradition of baksheesh (bribe) payment to the officials working in the public sphere is the heritage of centuries of Turkish governance. In the meanwhile, the centuries of Austrian influence in the current Czech Republic and Slovenia had a completely opposite result, strengthening compliance and tax discipline. It is worth mentioning that the cost of collection of one unit of tax income in Slovakia and Poland is double the EU average.<sup>35</sup>

Table 4 demonstrates the ratio of the tax burden on consumption to the tax burden on labour income in the different countries.<sup>36</sup> Croatia is the most committed to the taxing of consumption, followed by Bulgaria, Hungary, and Slovenia. On the other end of the scale, the Czech Republic, Romania, and Poland prefer the taxing of labour incomes (to taxing consumption), but the ultimate ‘winner’ of this category is Slovakia, where the tax rate of labour is double the tax rate of consumption.

### Economic and corporate structure

Where the weight of micro- and small enterprises is well above the average, the application of a higher tax burden on labour is contraindicated, as it may encourage the practice of tax evasion, an effect that is also implied by a higher share of the tourism industry in the overall economy. These reasons are also in the background of the lower labour tax rates in

Poland, Croatia, and Bulgaria. In contrary, the bigger contribution of industry to the overall economic performance (like in the Czech Republic and in Slovakia) allows the state to levy higher taxes on labour incomes.<sup>38</sup>

### Public debt, compliance with the deficit barrier of 3 percent, deficit of public pension fund

A 30 percentage points higher level of the debt-to-GDP ratio entails<sup>39</sup> a surcharge, currently equalling approximately 1 percent of the GDP, the financing of which requires the increase of the labour tax rates by 2.5–3 percentage points.

At the outbreak of the crisis, keeping the government deficit under the barrier remained a priority for Hungary. In the meanwhile, all the other countries let their deficits to increase massively above 3 percent, but in 2–3 years, the Czech Republic joined Hungary’s targets in term of the deficit barrier and Slovakia had

Table 4

#### THE RATIO OF THE IMPLICIT TAX RATE ON LABOUR AND THE IMPLICIT TAX RATE ON CONSUMPTION<sup>37</sup>

	2012*	2016**
Bulgaria	1.28	1.12
the Czech Republic	1.75	1.61
Croatia	1.13	
Hungary	1.37	1.34
Poland	1.83	1.65
Romania	1.60	1.48
Slovakia	2.03	2.06
Slovenia	1.51	1.42

\* Using also the data from EU (2015), p. 183.

\*\* Own calculation from the data of Taxation Trends in the EU 2018.

Source: EU

the same intention. Other countries refused to raise the tax burden levied on labour even when having a deficit of around 3 percent in order to optimize the deficit indicators. Moreover, there were countries (Croatia and Poland) that used the deficit level (at or even above 3 percent) to stimulate their internal markets; currently, Romania has similar intentions.

From among the two countries having the most considerable deficit rate of public pension funds (reaching 5 percent of the GDP), Bulgaria was able to reduce the deficit in 2017 and 2018; while Serbia moved towards a balanced position by reducing the expenditures (pensions) as well from 2014.

#### Compulsory payment indicators over the last decade

The tax burden on labour exceeded the current level by 6–10 percent in most of the region's countries right after the millennium, in terms of micro- and macro-indicators as well, what led to a massive enhancement of grey economy, in particular in the southeast region. Under these circumstances the tax reform of Slovakia in 2004 proved to be a desirable option: most of the countries switched to a flat rate or imputation taxation scheme. In the same time, the social insurance contributions were measurably reduced in the southeast countries and in Poland as well.

This trend was broken by the crisis and then reversed by a slight increase in contributions (still, the social insurance tax rates remained under the respective levels of 2006–2007). Moreover, in two countries the top rate of tax was reinstated in order to increase the tax burden of high-income workers.<sup>40</sup> The next turning point was the tightening of the labour market in 2016, that resulted in a considerable increase in the real wages mainly in the countries with independent foreign exchange

rates, also supported by changes in the tax- and contribution rates in certain cases.<sup>41</sup>

## 4 CHANGES IN THE COMPULSORY PAYMENT OBLIGATIONS LEVIED ON LABOUR INCOME IN THE DIFFERENT COUNTRIES

### Bulgaria

The rate of value added tax revenues is relatively high, but the efficiency of tax collection is rather low. The public debt level is low. The considerable share of tourism (and agriculture) in the overall performance of the economy would imply a lower level of labour-related compulsory payments.

A flat-rate PIT was introduced in 2008. In the taxation scheme, there is no income band exempted from tax obligation, but the applied flat rate is low (10 percent). In 2009, the taxes on labour and the social insurance contribution were further reduced; the rate of the latter dropped to 18 percent from the original 22 percent.<sup>42</sup>

The need and the possibilities of reduction of the currently 4–5 percent pension fund deficit-to-GDP ratio is a recurring topic since 2009. For this purpose, the rate of social insurance payment was increased by 2 percentage points in 2017–2018. In 2000, a private pension scheme was introduced, and a certain portion of contributions paid are automatically transferred to the private fund; the rate of transferred money is a fix 5 percent, unchanged since 2007.

The compulsory payment obligations are lower than in the other countries.

### Poland

Poland has a relatively high VAT rate; still, the portion of sales taxes is average; the reason for this phenomenon is the deterioration

of the efficiency of VAT collection after the crisis.

The small enterprises have a traditionally important role in the economy (we should remember, that they had even managed to avoid being absorbed in the *kolkhoz* system back in time); therefore, a relatively low rate of taxes levied on labour was always in the focal point of the financial management of the country. It is no wonder that they quickly seized the Slovak example of flat rate PIT: in 2008–2009, Poland replaced its former three-tier personal income tax rate with a ‘seemingly’ two-tier PIT system and reduced the social insurance contribution level as well.<sup>43</sup> The private pension fund scheme was introduced in the country quite early, in 1999; however, after the crisis, they followed the example of Hungary: in the first step, the rate of the compulsory private pension fund contribution was drastically reduced (to 2.3 percent from the former 7.3 percent) in May 2011, while since 2014, the participation in the private pension scheme is not compulsory anymore, due to which measure the number of the scheme’s paying members fell back to a small portion of the original. The implicit tax rate on labour differed from the usual average in one single year only (2013). With respect to 2017–2018, a reduction thereof by an estimated one and a half percentage point is expected, while from 2019, the upper threshold of social insurance contribution will be eliminated.<sup>44</sup>

The overall rate of compulsory payments is relatively stable since 2012.<sup>45</sup> In summary, the compulsory payment indicator of the country is among the lower ones in the region.

### Slovakia

Slovakia is known as the country of ‘three-times–19’ tax scheme upon the introduction of the VAT, PIT, and tax on profit of

uniformly 19 percent in 2004. This measure also improved the attitude to taxation, what contributed to the reduction of the relatively high social insurance contribution rates in 2008–2009.<sup>46</sup> The weight of VAT income is less, due mainly to the deteriorated efficiency of tax collection during the crisis.

The country has medium-level public debt. In order to encourage demand, the country undertook to maintain a high level of deficit during the crisis period, but thereafter (from 2013), the rate of compulsory payments was increased again, together with the re-introduction of an upper PIT band (which still exists, however, it applies to a very narrow group of private individuals only).<sup>47</sup> The acceptance of uniform and stricter social insurance provisions was a more efficient tool for the increase of the state’s income.<sup>48</sup> It is interesting to note that employers are obliged to pay a profit share to their employees (in an amount of 0.6–1 percent of wages). (This payment is classified by the OECD as an extra-tax payment of 0.6 percent).

The rate of private pension fund contributions (after the introduction of the scheme in 2006) was the highest (9 percent of wages) in Slovakia. In October 2012, this rate was reduced to 4 percent; however, a gradual increase thereof (by 0.25 percent per year) was promised to happen after 2017 (the targeted rate of contribution is 6 percent).

In summary, the compulsory payment indicator of the country is among the highest ones in the region.

### Hungary

Due to the high level of indebtedness, the traditional elements of the taxation scheme were overexploited; moreover, a vicious circle had evolved. Due to the high level of VAT and income taxes the grey economy became more



robust (lessening thereby the chances of proper operation of taxation scheme), while the effect of inflation aptitude, arose on the grounds of marginal taxes, the monetary management intended to reduce by the artificial strengthening of the Hungarian Forint from time to time. However, the latter measure resulted in the evolvment of an excess of imported goods, further increasing the country's level of public debts. The maximization of extra profit by private monopolies in the service industry during the years of the crisis was a further aggravating factor.

By 2010, it became obvious that the escape from this situation requires extraordinary measures: like the suspension of payments to private pension funds in 2010, the introduction of specific taxes on extra profits and the switch to a flat PIT rate (following the example of Slovakia) in 2011–2012. In the same time, on the labour market the employment of disadvantaged groups is incentivized by tax allowances. In the second period of the 'W'-shaped crisis, in 2012, the deficit of the state budget became a material problem again, urging the government to increase VAT to a record level (27 percent).

Thereafter, specific measures were made to whiten the economy (online cash register, EKR – Electronic Public Procurement System – etc.). The extra income the government gained from the latter measures was used for the reduction of tax burdens since 2016: PIT rate was lessened by 1 percent, social insurance contribution level was reduced by 7.5 percent, as well as the VAT payable on certain goods was moderated. Until 2017, the implicit tax rate on labour was the highest in the region. After 2015, the indicator decreased by 4 percent. Also, the compulsory payment indicator's value is significantly lower compared to its previous, excessive rate.

This value is further increased by two distinctive factors: first, by the business tax<sup>49</sup>, and

second, by the accentuated role of enterprises in the agriculture, which are the subject of general (high)payment obligations levied by the state<sup>50</sup>. The first factor increases the prevailing value of the indicator by 2, while the second by 0.8 percent.

During the 3 years between 2016 and 2018, the income level is expected to grow by 28–30 percent. In summary, the compulsory payment indicator shows a definite trend of decrease. Its current level is still above the region's average, but (by 2019) it is foreseen to drop below the average of the Western continental countries.

The 2018–2022 Convergence Program predicts a low rate of a deficit of the public pension fund until 2030 (its rate-to-GDP to remain below 0.5 percent). However, the deficit's rate-to-GDP is expected to achieve 1 percent around 2040 and 2–2.5 percent between 2050 and 2070.<sup>51</sup> A certain part of income from sales taxes is proposed to be separated from 2040, for the purpose of making up the pension fund's deficit.<sup>52</sup>

## Slovenia

The country is a unique example of avoiding the privatization of the enterprises inherited from the old regime. On the grounds of nationally owned economy, deliberate efforts were made to adjust to and fix the wages at a level similar to its neighbouring countries. This higher level of wages is most probably the reason for keeping a progressive scheme of the PIT (due to the 'it's enough to go around' principle), alone in the region.

The social insurance contribution was lessened by 4 percentage points in the three years directly preceding the outbreak of the crisis. The public debt of the country shot out during the crisis. The share of sales taxes among overall public income is average, due partially to the effectiveness of tax collection.<sup>53</sup> No

private pension scheme is introduced. The compliant behaviour of private individuals is another factor that makes the relatively high taxes maintainable in the country. The taxation scheme is predictable and stable.

In summary, the compulsory payment indicator of the country is among the highest ones in the region.

### The Czech Republic

The country has a rather moderate income from sales taxes; hence, the taxes levied on labour are of bigger importance. In 2008, a flat PIT rate was introduced, with a wide tax-free income band. In 2008–2009, the social insurance contributions were also lessened by one and a half percentage points.

The country has a moderate indebtedness ratio and interest burden. The higher weight of industry in the economy allows the maintenance of a more considerable tax burden on labour, which is also supported by the typically compliant behaviour of the Czech people. No private pension scheme is introduced. Wages were materially increased in 2017 (by 7 percent).

In summary, the compulsory payment indicator of the country is among the highest ones in the region. The compulsory payment scheme (as well as the typical indicators thereof) demonstrate a stable and predictable system.

### Romania

Romania has a moderate indebtedness ratio and interest payment obligation. The country switched to the use of a flat rate PIT before the crisis; in the meantime, they also reduced the level of social insurance contributions<sup>54</sup>.

The weight of VAT-income is under the

region's average. Tax collection is inefficient, what might also be a reason behind the considerable reduction of sales tax after the crisis (the general tax rate was increased by 5 percent, while the sales tax on edibles by 15 percent (2014–2016)). The social insurance contribution rate was also lessened by 5 percent by 2015. 2018 was the year of extensive structural changes.<sup>55</sup> Since January 2018, almost all contributions shall be paid directly by the employees instead of the employers. The aggregate value of social insurance contributions is 2 percentage points less (total compulsory payment rate is 38 percent), and the PIT rate was also reduced by 6 percent.<sup>56</sup> The increase in wages is considerable since 2014 (the nominal value of increase between 2013–2017 was 47 percent).

The relatively low level of compulsory payments implies a relatively low retirement pension. In 2008, the private pension fund scheme was introduced (with an initial rate of 2 percent). During the financial crisis, any considerable increase of private pension fund contributions was reasonably avoided.<sup>57</sup>

In summary, the total tax burden on labour income

- is average in terms of the micro-level indicator (compulsory payment indicator),
- is low in terms of the macro-level indicator.<sup>58</sup>

### Croatia

For a long time, Croatia's national economy is governed by the intention to receive considerable income from tourism. For this purpose, they often used the currency exchange policy as a tool.<sup>59</sup> This resulted in a relatively high and stable wage level (around one thousand euro per month) – however, this is also the background of the high rate of unemployment.

The rate of social insurance contribution was reduced before the crisis, but later, under the pressure of necessity, they levied a yearly crisis tax for one and a half years.<sup>60</sup> The social insurance contribution payable by the employers was less for one year, in 2014.<sup>61</sup> In 2017, an imputation taxation scheme was introduced, and the lower threshold of tax exempted income was raised by the elimination of the lower tax rate (12 percent). As a result, the number of people exempted from tax payment obligation increased by one-third (half a million people) and the tax burden fell back by 0.4 percent of the GDP.

Croatia has a high indebtedness ratio; hence, a considerable portion of tax income is spent on interest payment. The weight of sales taxes among the state's income is extremely high (19 percent of the GDP). This is the result of the high tax rate on the one hand, and to the effective tax collection on the other hand. As tourism has a considerable share in the economy, the rate of compulsory payments on labour income shall be kept at a moderate level. Though retirement pension level is low, the allowances paid to veteran soldiers generates high expenditures from the pension fund and a considerable deficit. The private pension scheme was introduced in 2002, the rate of contribution payable to such funds is a stable 5 percent of the wages.

The excessively high income from sales taxes allows the government to keep the tax rate on labour relatively low.

### Serbia

Serbia switched to the use of a flat rate PIT in 2008; in the meantime, they also reduced the level of social insurance contributions by one and a half percent. The country has a high indebtedness ratio, and financing of interests is made even more burdensome by the un-

favourable credit rating. The weight of VAT-income is high.

The compulsory payment indicator, calculated to average income, was 39 percent in 2016. As Serbia is neither a member of the OECD nor the EU, none of the indicators of these two organizations is calculated concerning the Serbian economy.

The retirement pension level is rather low; from 2014 the value of pensions was reduced (following which measure the rate of pension to GDP was 0.6 percent) and the social insurance contributions were increased from 2015 (by 1.5 percent) in order to create a balanced situation in the funds. No private pension scheme is introduced.

In summary, the compulsory payment indicator in Serbia is rather low compared to other countries in the region.

## 5 EFFECTS ON MACROECONOMY

### Tax burden and inflation

It is an important question whether the taxation scheme of a country has an inflationary effect when wages increase. If the applied tax is progressive and the tax bands are left unchanged, as a result of increasing wages more and more people will fall under the higher tax rates; hence, in order to achieve the intended rise in real wages, the volume of gross wage increase shall exceed the volume of the increase in prices. However, if there is a flat tax rate or a moderately progressive tax scheme, the compulsory payments levied on labour income are neutral from the aspect of inflation. All countries in the Visegrád region apply either flat tax rate or a 'seemingly' imputation taxation scheme (except for Slovenia); therefore, the trend of wage increase, lasting for two years already, has not induced yet any fast-paced increase in inflation rates. Never-

theless, in Hungary, the excessive marginal tax rate was one of the reasons behind the permanent ‘stuck’ of the inflation rate.<sup>62</sup>

### Competitiveness

There is a proven link between a high tax wedge and a higher volume of public expenditures on the related government goals (like pensions, unemployment benefits, healthcare) compared to other countries. Although a low tax wedge might be attractive for certain investors, it’s worth considering that in many cases the investors shall bear some expenses (vocational training, healthcare services provided for employees as payment in kind, etc.) instead of the ‘poor’ state, or they might be hindered in finding a proper business site due to the low taxes (for example, if the available manpower is concentrated far from the motorways).

## 6 CONCLUSIONS

The following answers may be given to questions raised at the beginning of this study.

① In our opinion, the only acceptable indicators for the comparison of labour incomes in different countries, the studies of high standard may operate with, are compulsory payment indicator on micro-level and the implicit tax rate on labour<sup>63</sup> on macro-level.

② The reasons for most of the differences between the above two indicators in the Visegrád region are

- the differences between the levels of pension paid in the countries,
- the urging pressure on more indebted states (like Slovenia) to collect more income for the central budget. These countries can only avoid the use of a high tax wedge if the income collected from a considerable tax burden of consumption provide sufficient cover to finance their public debts and the associated interests (Hungary, Croatia),
- the weight of small enterprises and tourism in the economy.

③ In Hungary, the current (2018) tax wedge is above the region’s average (yet), but otherwise, it corresponds to the same indicators of the ‘old’ continental EU-countries.

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### APPENDIX

#### COMPULSORY PAYMENT INDICATOR ON DIFFERENT INCOME LEVELS

The comparability of compulsory payment indicators pertaining to different income levels in the region is possible if we examine the difference between the indicators pertaining to income levels slightly below and income level exceeding by 67 percent of the average.

As the social insurance contribution is payable on the total amount of the income, the indicator’s value is mainly determined by the

extent of the income band exempted from the PIT payment obligation:

- in countries, where the at least 40 percent of the average income is exempted from PIT, those who earn 67 percent of the average shall pay tax on one-third of their income. In contrary, those who earn 167 percent of the average shall pay tax on  $\frac{3}{4}$  of their total income; hence, in their case, the indicator’s value is relatively high. This phenomenon is typical in the examined 2 countries of former Czechoslovakia and of the former Yugoslavia:

• where the tax-exempt income band is narrower (Poland, Romania) the quotient is lower:

• where the PIT is payable on any income (Hungary, Bulgaria), the quotient is 100 percent.

Table 5

**THE QUOTIENT OF THE COMPULSORY PAYMENT INDICATOR PERTAINING TO AN INCOME LEVEL OF 167 PERCENT OF THE AVERAGE AND THE COMPULSORY PAYMENT INDICATOR PERTAINING TO AN INCOME LEVEL OF 67 PERCENT OF THE AVERAGE (% , 2017)<sup>64</sup>**

	%
Bulgaria	100.0
the Czech Republic	111.4
Croatia	131.8
Hungary	100.0
Poland	103.0
Romania (2018)	106.7
Slovakia	110.1
Slovenia	115.7

Source: OECD and own calculation

NOTES

<sup>1</sup> Taxation trends in the European Union 2018, p. 242

<sup>2</sup> With respect to specific years and certain non-OECD countries, we left the table blank – either because we couldn't find any relevant data in other sources, or because estimation of the indicator would have led to an unassured result.

<sup>3</sup> As the substantially flat-rate tax scheme mainly eliminates the differences in the compulsory payment rates in this respect.

<sup>4</sup> A few years ago, not even the EU DG considered the contribution paid to a private pension fund to be a compulsory payment.

<sup>5</sup> And their reason to do so was that from the aspect of workers, any payment made to the private pension funds has the same characteristics as the compulsory payments to the state. Remeta (OECD, 2015).

<sup>6</sup> See: Urban (2016).

<sup>7</sup> For more information on this, see: Sawulski (2016).

<sup>8</sup> Whereas, in their book published in 2018, they explicitly declare that private pension fund contributions are taken into consideration in the calculation of the indicator. See: Taxation trends (2018), p. 271

<sup>9</sup> Good examples of the same approach are Urban (2009), Radu (2016), the yearly publications of

Mazars and the tax wedge calculation of the Bulgarian Statistical Office.

- <sup>10</sup> EU Implicit Tax rate on labour, as per the methodology used in the issue of 2018.
- <sup>11</sup> See: Heijmans (2004) EU DG Taxation Trends (2017), description of methodology, p. 255 and (OECD, 2017).
- <sup>12</sup> However, the other indicator is calculated for many (15–20) typical family status, while the data pertaining to the different income-levels are shown in a table.
- <sup>13</sup> Warning! the compulsory contributions to private pension funds are not considered as compulsory payments in the calculation of the average tax wedge, used in the main publications of the OECD!
- <sup>14</sup> Only the most recent publications.
- <sup>15</sup> The extensive (450–500 pages) printed annual of OECD (Taxing wages) focuses only on the analysis of the other indicator (tax wedge).
- <sup>16</sup> See: Mazars (2017)
- <sup>17</sup> However, regarding the latter case, we must note that statistics usually classify the private pension fund contributions as net income.
- <sup>18</sup> See: Rogers (2011)
- <sup>19</sup> See: Picos-Sánchez (2011)
- <sup>20</sup> In this case, the comparison between the compulsory payment and the financing is rather simple, due to the effects of the ‘trend of introduction’ of flat PIT rates (as flat tax rates diminish the difference between the tax levied on low-income groups and the tax burden of those earning more than the average).
- <sup>21</sup> Taking into consideration the effect of the mentioned imputed social insurance contributions.
- <sup>22</sup> In 2016, weighted by wage bill, without the data of Serbia.
- <sup>23</sup> We took into consideration the fact, that in the EU, certain elements of the PIT- or social insurance contribution incomes are classified as compulsory payment on equity income.
- <sup>24</sup> A possible source of errors in our calculation may be a widescale transfer of employees to sole entrepreneurs (or vice versa) as the PIT and social insurance contribution incomes collected from the entrepreneurs shall (should) be taken into consideration in the indicator of tax burden on equity incomes (instead of the tax burden on labour incomes).
- <sup>25</sup> Sources of data in Figures 3 and 4: OECD,  
 • Poland and Slovakia (2008, 2011–2013): own calculations, OECD database.  
 • Bulgaria: data of the National Statistical Office.  
 • Romania 2009–2015: Radu, 2016–2018: own calculation.  
 • Croatia, 2011–2015: Urban.
- <sup>26</sup> We took over the indicator published on the website of the country’s statistical office; data are available only for the years since 2009. If this indicator were calculated with respect to the former period, it would have demonstrated a decrease in 2008–2009 (the rate of social insurance contribution was lessened).
- <sup>27</sup> As for the reasons, please refer to the chapter presenting the countries.
- <sup>28</sup> We calculated the values of the indicator on the basis of the tax schedule.
- <sup>29</sup> For 2017, we calculated the average by using the method of weighting by GDP values (disregarding the Serbian data).

- <sup>30</sup> In addition, we took into consideration the expectable effects of tax changes as well.
- <sup>31</sup> Source of data of Figures 5 and 6: OECD,  
 • Poland and Slovakia (2008, 2011–2013): own calculations, OECD database,  
 • Romania and Croatia: own calculation.
- <sup>32</sup> In the countries representing the majority of the population (235 million people), namely in Austria, Italy, Germany, France, the Netherlands and Belgium, the rate of compulsory payment on labour income was above 47 percent, while 43 percent in Finland and Sweden.
- <sup>33</sup> These countries are: Denmark, Ireland, and Great Britain. A common characteristic of these countries is their location: Ireland and Great Britain are island states, while Denmark lies on a peninsula.
- <sup>34</sup> Special attention shall be paid to the comparison of the Dutch indicator. In the publication 'Taxation trends in the European Union' (issued until 2014) the value of the Dutch indicator was 37–38 percent, which was later reduced by 5 percentage points to 32–33 percent.
- <sup>35</sup> Tax Reforms in the EU Member States: 2014 report, p. 107.
- <sup>36</sup> Eu Com. Taxation Working Papers 56 (2015), p. 183, actualized with own collection of data.
- <sup>37</sup> Source of data: EU (2017), EU (2015) p. 56
- <sup>38</sup> The rate of mixed income in the EU-countries in the region, in 2015: 21 percent in Poland, 19 percent in Slovakia, 7 percent in Bulgaria, 8 percent in Hungary, 10 percent in the Czech Republic (the average value is 16 percent, Romania is quite close to the average with 15 percent).
- <sup>39</sup> Let's compare the debt ratios of the Czech Republic o Romania (both under 40 percent) and the same of Hungary or Croatia (between 70 and 80 percent).
- <sup>40</sup> However, the latter measures of decision makers must have intended mainly to 'satisfy' the related claims, as these measures had no considerable effects on the revenue side.
- <sup>41</sup> Hungary, Romania.
- <sup>42</sup> In 2010, the same rate was further reduced to 16 percent and increased back to 18 percent in 2011.
- <sup>43</sup> The base rate of the disability pension contribution was reduced by 7 percentage points (to 6 percent from the original 13 percent) between 2006 and 2008, while two years later (in 2012) it was re-increased by 2 percentage points.
- <sup>44</sup> Currently, the upper-income threshold of social insurance contribution (above which amount the income is exempted from contribution payment obligation) is 2.5 times the average income. See: 350,000 Poles will pay more taxes.
- <sup>45</sup> It was slightly lower in one year only (2015).
- <sup>46</sup> After lifting the upper threshold of contribution payment obligation, the implicit tax rate on labour increased by 2008 and lessened again by the end of 2009, as a result of the introduction of negative tax and the enhancement of the scope of tax-exemptions. The indicator upgraded again in 2010 (to 33 percent).
- <sup>47</sup> Besides that, the rate of tax on profit was also increased.
- <sup>48</sup> There were material differences in the bases of tax (and contribution) depending on the legal nature of employment (whether employment was established for a long term or for a temporary period (less than 10 months) only). These differences were eliminated entirely after 2012. In the same time, the solutions

that allowed the preferential tax treatment of sole entrepreneurs to employees were narrowed, after surveys at the end 2012 established that one-fourth of sole entrepreneurs were working in the position of employees. See: Remeta (OECD, 2014)

A comparative analysis of the Romanian and Hungarian PIT systems in prepared by Judit Polyák (2016).

<sup>49</sup> The wage-proportionate value of this tax is also added by the EU DG to the numerator.

<sup>55</sup> See: Fiscal Council's Preliminary Opinion On The State Budget Law (Romania).

<sup>50</sup> In the continental countries, the agricultural sector is dominated by sole entrepreneur farmers is, whose labour-related tax burdens are significantly lower.

<sup>56</sup> The social insurance contribution payable by the employers was reduced to 2.25 percent, while the contribution payable directly by employees increased from 16 to 35 percent. The volume of money transferred to private pension funds fell back to 3.75 percent. See: Adózóna, 2017.

<sup>51</sup> The income from pension insurance contributions will decrease from 9 percent of the GDP (2018) to 8.3–8.5 percent by 2020 and stabilize on this level (until 2070). The fund is expected to reach balance around 2030 (due to the drop in the rate of expenditures from 9.7 percent to 8.4 percent). From 2040, another growing period of expenditures is foreseen, to a rate of 11 percent around 2050–2070.

<sup>57</sup> The rate of money transfer to private pension funds was raised up to 5.1 percent by 2016.

<sup>52</sup> The proposal is the transfer of (for example) the excise duty income from the sale of fuel to cover pension-related expenditures. From 2040, one-third, while in 10–15 years thereafter the entire amount of such income should be redeployed.

<sup>58</sup> A reason for this difference might be the hidden progressivity of the seemingly flat rate PIT: the volume of tax allowance granted per person is progressively lessening as the level of income is growing (on the upper levels no allowance is available).

<sup>53</sup> The country's income from excise duty is further increased by keeping the fuel prices consciously low so that even the transit travellers stop by at the fuel stations in Slovenia to refill their tanks.

<sup>59</sup> The country's currency, kuna, has been indexed to euro for 2 decades already (previously it was indexed to German mark).

<sup>54</sup> Social insurance contributions were reduced by 2.5 percent from 2009, then increased it again from 2010, by 1 percent, to 45 percent.

<sup>60</sup> Between February 2009 and October 2011. The tax burden on average income was 4 percent.

<sup>61</sup> 15.2 percent instead of 17.2 percent

<sup>62</sup> Giday (2017) has already analysed this question.

<sup>63</sup> The adjusted version of the implicit tax rate of labour taxation.

<sup>64</sup> Source of data: OECD and own calculations (with respect to Bulgaria, Romania, and Croatia).



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